

# CARBON MOLECULAR SIEVE AND PROCESS FOR PREPARING THE SAME

## Abstract of the Disclosure

5           The present invention provides a carbon molecular sieve prepared by forming  
carbon nanorods or carbon nanotubes with a uniform diameter inside pores of siliceous  
mesoporous molecular sieve and a process for preparing the same. The process for  
preparing a carbon molecular sieve of the present invention comprises the steps of;  
10           adsorbing a mixture of an aqueous carbohydrate solution and an acid or a precursor of  
carbon polymer into pores of mesoporous silica molecular sieve template, and  
polymerizing; heating the mesoporous molecular sieve including polymeric material at  
400 to 1400°C under vacuum condition or without oxygen to accomplish thermal  
decomposition of the polymeric material included in the pores; and, reacting the heated  
15           mesoporous molecular sieve with hydrofluoric acid or aqueous sodium hydroxide  
solution and removing the template to obtain a carbon molecular sieve. The carbon  
molecular sieve of the invention is superior in terms of the hydrogen adsorption effect  
and the activity for oxygen reduction, which makes possible its universal application for  
the development of adsorbents for organic materials, sensors, electrodes, and materials  
20           for fuel cells and hydrogen storage.

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